ABSTRACT OF THE DISCLOSURE

In the event of displaying only increase (or disappearance) of shadows in a difference image generated based on a display mode selected by a user, a difference image is subjected to gradient conversion so that only the luminance of the region(s) where a shadow has increased (or disappeared) differs from the luminance of other regions, and the difference image thus subjected to gradient conversion is displayed, thereby displaying the states of shadow change independently. Also, negative/positive information in a past image and a current image is extracted, and further, correlation of the diagnostic judgment reference of shadows on the difference image is input. Definition of the shadow stipulates whether the parts of the affected portion improving or deteriorating are to correspond to high concentration (high luminance level) or low concentration (low luminance level) on the difference image. This facilitates observation of changes in shadows.